



Spark Gap

Vol. 36, Issue 3, March 2020 *MARC - Serving Central Indiana Communities for thirty-six years*

On Our MARC:

Hope everyone is staying safe these days. This CoronaVirus is really hitting things hard. As you may have heard from an email that was sent out and the announcement made on the Sunday night net, we will not be holding out monthly meeting this month. REMC has closed the room to visitors for the month of March and maybe for April meeting. More to come on that once we hear from them.

Also, the Columbus Hamfest has been canceled too. I heard the Dayton Hamfest has been canceled and that's three months away! Anything that we have to do to keep everyone safe we will do.

Only a few more days and spring will be here. March is severe weather preparedness month across the United States. With spring comes the possibility of Storms and severe weather. I heard 15 of you attended the Storm Spotter training that was held Thursday, March 5th. Great show of support. Thank you all for those who attended!!

April's speaker will be Bob Jones, KC9NJM. The topic will be weather! He will spend time reviewing weather nets, how they work, and how we interface with the statewide net.

Please mark your calendars for June 13th, 2020. This is the date that we will be attending Strawberry Fest along with the White River Township Fire Dept. This is a great time to get out and promote the hobby and eat some great food. Plus, help the Fire Dept. out. Haven't heard yet if this will be canceled or not but I will be in contact with them. Stay tuned.

Please keep Brenda in your prayers. She has had surgery. Things went well and she is at Aspen Trace for rehab. Your prayers would be appreciated.

Just a reminder that we are in a New Year and it's that time of year to get your dues current. If you haven't paid your dues for the year, please see Chris at the meeting. Thanks to all of you who have paid your membership for 2020.

Jacki-K16QOG --- President

******* IMPORTANT *******

Just wanted to let everyone know that the officer's will try to hold a meeting on the air this Saturday, March 21st at 9:00 AM.

***Hope you can make it and hopefully you will have coffee.
Sorry, no donuts.***



N9LC – Steve Brown
Kb9LOT – David Daily
KC9EBL – Brenda Haler
KC9VGQ – Chris Mazzella
W9MNN – Noel Mortier
AB9VM – Ryan Rather
KC9WLR – Michael Rose

TIME TO GET ON THE AIR

During these time of being at home, this is an opportunity of getting on the air via HAM Radio. This not just to talk with a fellow HAM but to let them know you are there. In the recent days there has been increased activity of more HAMs on the bands in some time. I usually check into nets in the morning and late in the afternoon and there has been an increased amount of radio activity on the bands. Some amateurs are expressing their views on the current events of the virus or what may be needed in their communities during these stressing times.

There may not be an urgent need of amateur radio by our local Emergency Management Agencies during these times of a virus but please stay tuned just in case there maybe a need to assist some local service agency or families in your area. We should be available to assist whenever possible in our communities.

This is also a good time to check into the other amateur radio nets that might be in the surrounding counties where you live. Checking into these other nets will expand the your knowledge of who is near you in a neighboring county and who you are and your location. Spring in Indiana usually has it's surprises with weather events but this year it is different with a virus that the medical people are still trying to figure out what will happened next. If you check into the other nets around your county you will be more familiar with other HAMs call signs and where they are located. The other net will also know your location just in case you are called upon to check on someones welfare in your county.

We need to become familiar with our neighboring HAMs and be ready to help out if needed. It may be no more than a welfare check to see how someone is coping with their situation or something more serious that can be desperately needed by a family.

The brotherhood (females included) of amateur radio is strong and will persevere through these trying times now as in the past.

END OF ERA

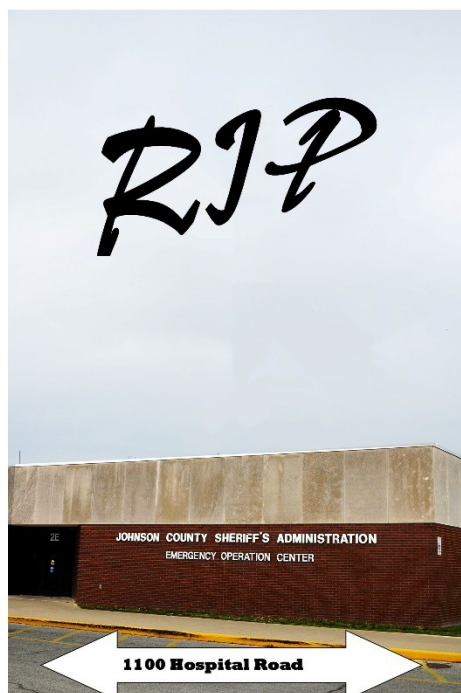
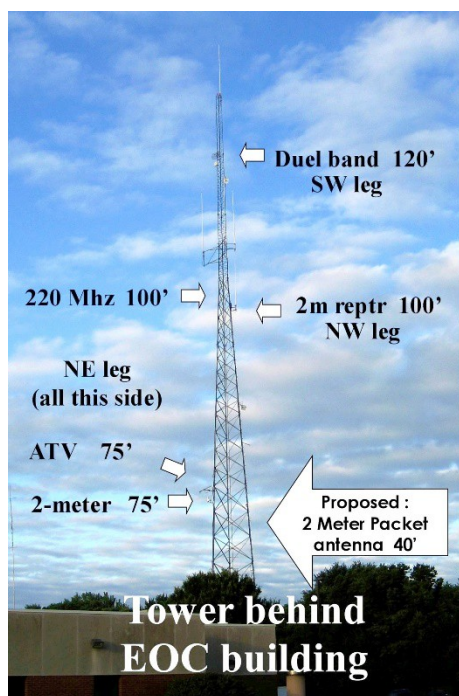
And, as of March 8, 2020 the end of an era passes for Johnson county Amateur Radio Operators. After thirty-two years of operation the short radio tower behind the Johnson county sheriff's office has been demolished to make way for future jail expansion.

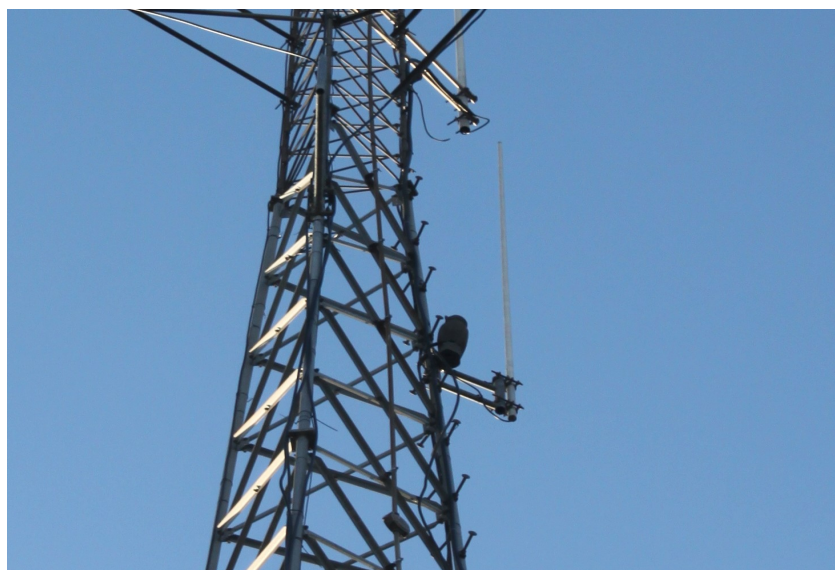
In 1988 the Mid-State ARC hung its first VHF repeater antenna on that tower and installed a Cushcraft R7 HF antenna on the roof of the new Jail Administration building. By early 2000 the EOC radio room equipment expanded to include multiple frequency rigs. In just over three decades our collection of antennas grew on the tower.

The pictures show antenna placement in 2011 as we submitted a proposal for an antenna and Packet station to the RACES arm of Indiana Homeland Security. The before and after pictures show the tower with antennas and then the sheriff's admin building without the tower as of this writing.

Repeater trustee Chris Frederick, KQ9Y has been monitoring the impending tower demolition and was able to scavenge several pieces of coax, hardline and antennas for future use. Demolition plans call for the club's repeater shack located at the base of the tower to be demolished along with the sheriff's storage barn.

-Jack w8ish





The Owl stood it's post until the end.

**** Thanks Chris KQ9Y for the picture.

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A pick from the past.

How the National Bureau of Standards helped make “radio”

This was originally published as “NIST’s Role in the Early Decades of Radio (1911-1933)” on the National Institute of Science and Technology’s blog, [Taking Measure.....](#). Dan

Even if you weren’t able to watch the recent Super Bowl on TV, you could still listen to the play-by-play commentary on the radio. But radio does more than just broadcasting sporting events or playing music. It plays a major role in emergency response, navigation and science.

The word “radio,” however, didn’t become part of our regular vocabulary until 1911, and it happened thanks in part to J. Howard Dellinger, a radio scientist at the National Bureau of Standards (NBS), the agency that became the National Institute of Standards and Technology (NIST). This came about when the second International Radiotelegraph Conference was being planned in London, and a professor sent Dellinger a paper that he was going to present to the conference for review.

At the time, “wireless” was used as the term for radio communication, especially by the British. However, NIST was charged with revising standards in preparation for the conference, and Dellinger suggested that the professor use “radio,” which was already becoming a popular word in the U.S., instead of “wireless.” The professor agreed, and the word “radio” went on to become the universally accepted term.

Dellinger not only played a role in popularizing the word “radio,” but he also played a role in the first radio work done at NIST. A commercial company asked NIST to calibrate a wavemeter, a device developed by one of its engineers that measures electromagnetic waves like those of radio. Dellinger was known as the wireless expert and took on the project of calibrating the first radio instrument at NIST.

A New Type of Radio Receiver

But for radio to become mainstream, it first had to be commercialized, which began with its introduction into households. However, the challenge was building a radio set that used the electrical current, called alternating current (AC), which powered lights, fans and kitchen appliances when plugged into wall sockets. The predecessor to this technology was developed and patented by two researchers, Percival D. Lowell and Francis W. Dunmore, at NBS in 1922. They called their invention the “mousetrap.”

The “mousetrap” was a receiver for a radio amplifier that could run on AC. This was considered a breakthrough because at that time radios were only able to be powered by direct current (DC) provided by batteries. These batteries were bulky and heavy, had to be charged from time to time and were considered dangerous because of the acid used in them. The researchers’ prototype meant the radio could be used in homes without causing damage and with the same performance quality.

Lowell and Dunmore filed two more patents together for other innovations, and for the “mousetrap” they sold the rights to the Dubilier Condenser Corporation. Little did they know that, because there was

no uniform policy on patents issued to government employees, their actions would result in more than a decade of litigation over who legally had the rights to the patent.

While they were tied up in court, the Radio Corporation of America (RCA) developed its own model of the AC radio in 1926. Its model later became the first AC-powered radio sold to consumers.

Flying by Radio

During the early years of flight navigation, NIST was doing research to assist pilots while they were flying and landing. Pilots needed three things to get their bearings when flying “blind,” meaning it’s foggy, too dark or too cloudy to see. They needed to know the longitudinal position, altitude and speed of the aircraft, which were all achieved by various beacons installed in the plane. The remaining issue was that there were two frequencies the pilot constantly had to switch between the frequency that the Department of Commerce used to send weather information to planes and ships, which sometimes caused interference for pilots, and the frequency the radio beacon operated on, which gave altitude and other information.

Dunmore created a prototype, but Harry Diamond, a radio engineer who joined NIST in 1927, completed the device, called the radio guidance system. Diamond solved the problem by developing a separate device that allowed for voice communication to the pilot without receiving any outside interference from ships’ radios.

A Curtiss Fledgling, a trainer aircraft developed for the U.S. Navy, was equipped with the device, and flight tests were performed between NIST’s experimental air station at College Park, Maryland, and Newark Airport in New Jersey in foggy weather. After a series of successful tests were performed, the device was turned over to be used by the Department of Commerce in 1933.

Praise From a Famous Inventor

While mostly intended for serious users, some of NIST’s journals and publications were popular with the public. One such book, titled *The Principles Underlying Radio Communication*, covered topics such as elementary electricity, radio circuits and electromagnetic waves and was also published as a textbook for soldiers in the U.S. Army. The famous inventor Thomas Edison received a copy from NIST and wrote a letter thanking the first director, Samuel W. Stratton, for publishing it, saying it was “the greatest book on this subject that I have ever read.”

As these and other examples show, NIST had a significant influence on radio research between 1911 and 1933. However, NIST’s radio work didn’t end with the first blind landing. NIST would continue to contribute to the field leading up to and during World War II, and research continues to this day in areas such as 5G, public safety communications and spectrum sharing.

ABOUT THE AUTHOR

Alex Boss is a general assignment writer in the NIST Public Affairs Office and covers standard reference materials (SRM). She has a B.S. in biology from Rhodes College and an M.A. in health and...



FCC Levies \$18,000 Fine on Louisiana Amateur Radio Licensee

In an enforcement case prompted by complaints filed in 2017, the FCC has imposed an \$18,000 forfeiture on Jerry W. Materne, KC5CSG, of Lake Charles, Louisiana, for intentional interference and failure to identify. The FCC had proposed the fine in a *Notice of Apparent Liability (NAL)* in the case in July 2018, and, based on Materne's response to the *NAL*, the agency affirmed the fine in a March 12 *Forfeiture Order (FO)*.

As the FCC recounted in the *FO*, an FCC agent "observed Materne causing intentional interference to a local repeater by generating digital noise into an analog radio." The agent further reported that Materne failed to transmit his call sign, as required.

Materne disputed the FCC's findings, arguing that the *NAL* should be canceled because the agent "was mistaken in his determination that the source of the interference was Materne's station" as his radio was not capable of operating on the repeater frequency in question, the FCC said in the *NO*. Materne also asserted that he is unable to pay the fine and suggested in his response that the FCC should be able to access his financial information.

The FCC countered that the radio the agent observed in Materne's possession was capable of operating on the frequency in question. "We therefore are unpersuaded...that the proposed forfeiture should be canceled because, he alleges, he was not the party causing interference to the repeater and the radio in his possession could not operate on the frequency in question," the FCC said in affirming the findings of the *NAL*. "We are also unpersuaded by Materne's argument that he lacks the ability to pay the full \$18,000 forfeiture." The FCC said Materne failed to provide the FCC with proof of inability to pay, as required by the *NAL*.

The FCC gave Materne 30 days to pay the fine, or face having the case turned over to the US Department of Justice for enforcement.

..... ARRL News March 2020

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UP – COMING ACTIVITIES AND HAMFESTS

03/21/2020 – 0900 MARC Monthly meeting On Air 146.835 MHz – (PL151.4) repeater everyone please join in for our first on-air club meeting.

04/18/2020 – 0800 MARC Monthly meeting at the Johnson County REMC.
Johnson County REMC 750 International Drive Franklin, IN 46131.

05/16/2020 – 0800 MARC Monthly meeting at the Johnson County REMC.
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06/20/2020 – East Central Indiana Hamfest – Randolph County Fairgrounds

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MID-SATE AMATEUR RADIO CLUB

The Mid-State Amateur Radio Club meets the **THIRD SATURDAY** of each month at the Johnson County REMC 750 International Drive Franklin, IN 46131.

See our website, www.midstatehams.org, for maps on how to get to our meeting.

Everyone is welcome; you do not have to be a *HAM* to attend our meetings or a member of the club.

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Club Officers:

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Vice President: Bruce Tisdale – K9ICP
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The Official Newsletter of the Mid-State Amateur Radio Club

P.O. Box 836
Franklin, Indiana
46131

Spark Gap Editor: Robert LaGrange N9SIU

Please send your articles to my email: n9siu@yahoo.com no later than the 2nd week of the month.



Special thanks to Johnson County REMC for the use of their community room for meetings and testing.